

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number: NX20P0477UKZ
Manufacturer: NXP USA Inc.
Package: 9-WLCSP (1.49x1.49)
Availability: Please confirm with sales

Product Page:

<https://antrexco.com/product/details/nxp-usa-inc/nx20p0477ukz.html>

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Supplier verification and packaging condition review

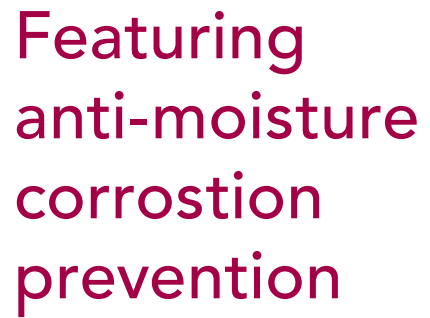
CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.



OVERVIEW

The NX20P0477 solution converts these USB-standard Rp currents—80 μA , 180 μA or 330 μA —from the CC/PD controller to an ultra-low current source to prevent corrosion. The CC/PD controller may recognize water on CC pins as detected Sink, the corrosion will be accelerated by CC/PD controller provides 5 V through V_{BUS} pins.

FEATURES AND BENEFITS

- ▶ CC1/CC2 leakage current: $< 1 \mu\text{A}$
- ▶ Fast OVP turn-off time: 60 ns
- ▶ Specified from -40°C to $+85^{\circ}\text{C}$
- ▶ WLCSP 9 bumps, $1.49 \times 1.49 \times 0.555 \text{ mm}$

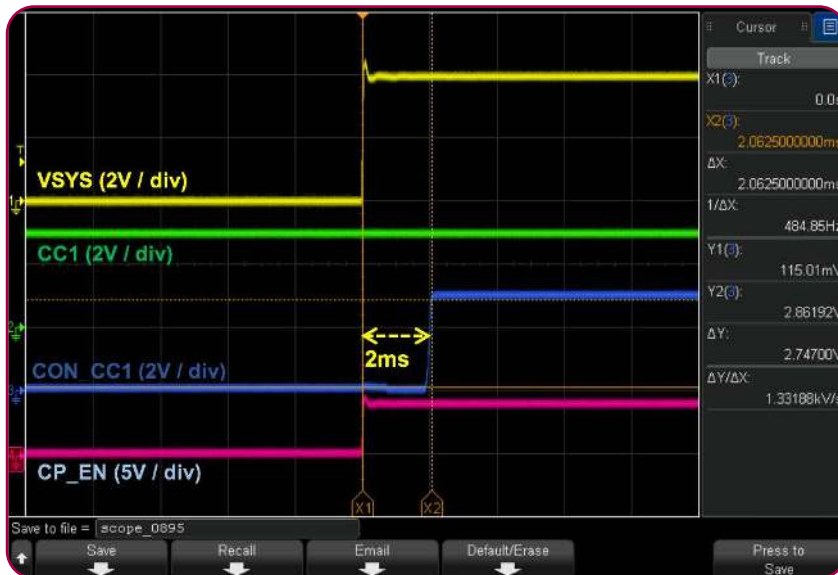
APPLICATIONS

- ▶ Smartphones
- ▶ Tablets
- ▶ Portable devices

USB TYPE-C CC LINE PROTECTION WITH CORROSION PREVENTION

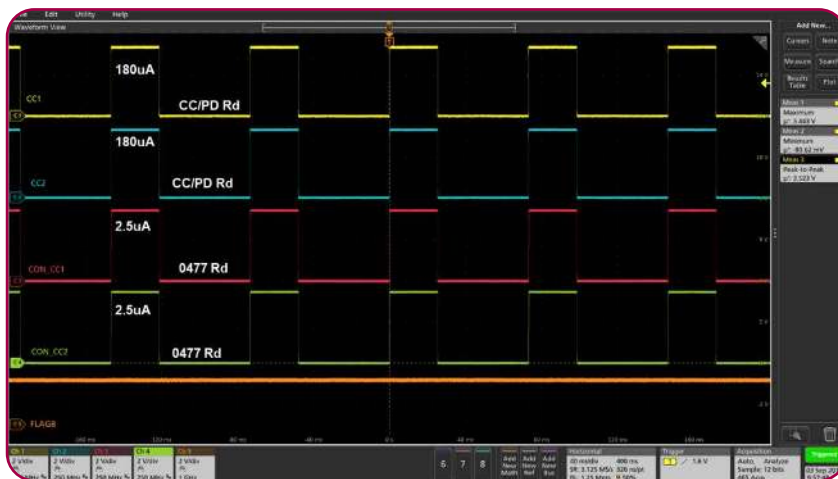


STARTUP



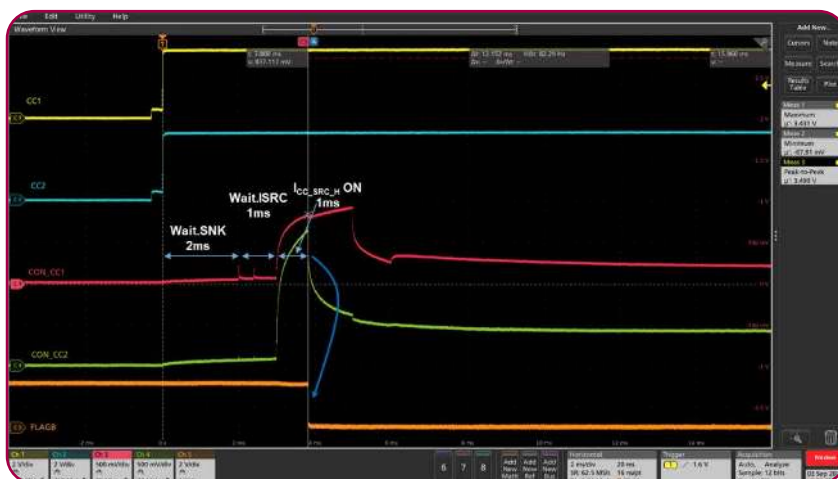
Start up: 2 ms power-up time from valid power source of V_{SYS} . When V_{SYS} is below $VSYSUVLO$, NX20P0477 stays in shutdown mode, where both CC switches are turned off. Once V_{SYS} is above $VSYSUVLO$, then NX20P0477 transitions to active state by turning the CC switch on within power-up time.

STANDBY



Standby: USB-PD standard requires 80 μA or 330 μA as RP to detect the sink device. NX20P0477 converts the USB standard current source from CC/PD controller to build-in a low current source (Typical $ICC_SRC = 2.5 \mu A$) to prevent corrosion from happening.

TAP WATER DETECTION



Tap water detection: When tap water is injected into the Type-C connector, the switch stays off. When water contacts the Type-C connector pin, NX20P0477 detects something has changed and enables the internal current source for $TSRC_WAIT$, which then enables the current source for TCC_DEB . During this time, CON_CC voltage increases and NX20P0477 detects water, so the switch stays off and $FLAGB$ is pulled down.